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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 10/607,291
Filing Date: June 27, 2003
Appellant(s): MOORE, STEVEN CLAY

Jeffrey S. Schubert
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed September 27, 2007 appealing from the Advisory action mailed May 3, 2007.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

This appeal involves claims 1-40.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

4,638,295	Middlebrooke et al.	1-1987
5,673,019	Dantoni	9-1997

4,348,655	Goertler et al.	9-1982

(9) Grounds of Rejection

The following grounds of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2, 4-7, 14, 16, 17, 20, 22, 24, and 28 are rejected under 35 U.S.C. 102(b) as being anticipated by Middlebrook et al. (US 4,638,295).

For claim 1, Middlebrook discloses a system to sense when a turn signal for a vehicle is turning and indicate that the vehicle is turning by varying a frequency and/or intensity with which the turn signal blinks, signaling to other motorists that the vehicle is turning (col 1, Ins 8-14), wherein the frequency and/or intensity with which the turn signal blinks is varied based upon an amount of time during which the vehicle is turning (col 2, Ins 29-42).

For claim 2, Middlebrook discloses using microcontroller(s), to take switching and sensory inputs and output a pulsing sequence to a circuit of the microcontroller(s) that drives turn signal lamps when the vehicle is turning (col 4, Ins 59-67; col 5, Ins 1-9; Fig. 2A, items 108, 94, 68; 110; col 6, Ins 1-15).

For claim 4, Middlebrook discloses a wheel (shaft) position sensor, or other resistive, capacitive or inductive sensor, to determine an amount to alter the frequency or intensity of the turn signal (col 4, lns 20-25 and 30-34; col 5, lns 17-26; Fig. 2A, item 52). The steering wheel column comprises both a wheel and a shaft for controlling vehicle movement. Therefore, Middlebrook discloses a shaft position sensor.

For claim 5, Middlebrook discloses adjusting turn signal frequency and/or intensity proportionally to a position of a shaft and/or the amount of time (col 2, lns 29-42).

For claim 6, Middlebrook discloses an apparatus to communicate a turn of a vehicle, the apparatus comprising: a sensor to detect a position of a shaft of the vehicle (Fig. 2A, item 52); a control circuit to generate an output signal (col 4, lns 62-68), wherein the output signal varies in proportion to the position of the wheel's shaft (col 5, lns 17-26); and a turn signal lamp to produce a turn signal based upon the output signal, wherein the output signal varies a frequency and/or intensity with which the turn signal lamp blinks in proportion to the position of the shaft (col 4, lns 20-40; col 6, lns 6-15).

For claim 7, Middlebrook discloses a switch to activate the control circuit to indicate the turn upon activation of the switch (col 5, lns 15-26; Fig. 2A, item 52).

For claim 14, the claim is interpreted and rejected for the same reasons as stated in the rejection of claim 6 as stated above.

For claim 16, the claim is interpreted and rejected for the same reasons as stated in the rejection of claims 1 and 4 as stated above.

For claim 17, Middlebrook discloses a shaft position sensor to (Fig. 2A, item 52; col 2, lns 26-42) determine an amount to alter the frequency or intensity of the turn signal based upon a displacement of a shaft (col 5, lns 17- 26).

For claim 20, Middlebrook discloses a method for communicating a turn of a vehicle comprising: generating an output signal with a frequency that varies in proportion to a position of a shaft (col 2, lns 29-40; col 4 ,lns 65-68; Fig. 2A, item 52); and outputting a turn signal in response to application of the output signal to a turn signal lamp, wherein the turn signal flashes in relation to the frequency (col 5, lns 15-26).

For claim 22, Middlebrook discloses varying a current to drive a thermal flasher for the turn signal (col 1, lns 25-32). Current varies in order to produce a flashing light.

For claim 24, the claim is interpreted and rejected for the same reasons as stated in the rejection of claim 17 as stated above. Furthermore, Middlebrook discloses varying the frequency based upon a rotational position between a previous position of the shaft and the position of the shaft.

For claim 28, the claim is interpreted and rejected for the same reasons as stated in the rejection of claims 1 and 4 as stated above. In addition, Middlebrook discloses that during a turn, wheels are turned at an angle (col 5 lns 17-26).

Claims 11-13, 18, 36, 37, and 39 are rejected under 35 U.S.C. 102(b) as being anticipated by Dantoni (US 5,673,019).

For claim 11, Dantoni discloses an apparatus to communicate a turn of a vehicle, the apparatus comprising: a sensor to detect an angle of a wheel of a vehicle (col 2, lns

26, 27, and 35-42); a control circuit to generate an output signal (col 5 lns 32-40; Fig. 1A, item 266), wherein the output signal varies based upon the angle of the wheel; and a turn signal lamp to produce a turn signal based upon the output signal (col 3, lns 55-67; col 4, lns 1-4), wherein the angle of the wheel varies the frequency and/or intensity with which the turn signal lamp blinks (col 3, lns 55-67; col 4, lns 1-4).

For claim 12, Dantoni discloses a switch to indicate the turn upon activation of the switch by the driver (col 4, lns 30-40; Fig. 1A, item 218).

For claim 13, Dantoni discloses the control circuit comprises a microcontroller to drive the turn signal lamp (Fig. 1B, item 266 and all switches on plate 266; col 3, lns 40-50).

For claim 18, the claim is interpreted and rejected for the same reasons as stated in the rejection of claim 11 as stated above.

For claim 36, Dantoni discloses a method for communicating a turn of a vehicle, the method comprising: sensing an angle of a wheel of the vehicle while the vehicle is moving (col 2, lns 27-38); generating an output signal based upon the angle (col 3, lns 57-67; col 4, lns 1-5); and applying the output signal to a turn signal lamp to vary an intensity with which the turn signal lamp blinks based upon the angle (col 4, lns 12-30).

For claim 37, Dantoni discloses varying a wattage applied to the turn signal. Wattage is varied by increasing the amount of light(s) to vary intensity (col 3, lns 60-67; col 4, lns 1-4 and 27-29).

For claim 39, Dantoni discloses a method for communicating a turn of a vehicle, the method comprising: sensing a position of a shaft of the vehicle; generating an

output signal for the vehicle (col 2, lns 27-42), wherein a wattage of the output signal varies based upon the position of the shaft (less illumination lower wattage, more illumination higher wattage); and applying the output signal to a turn signal lamp to vary an intensity with which the turn signal lamp blinks based upon the position (col 4, lns 12-30).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 8, 9, 21, 25, 26, 29, 30, 32, 33, and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Middlebrooke et al. (US 4,638,295), and further in view of Dantoni (US 5,673,019).

For claims 8 and 9, Middlebrooke discloses varying a frequency of the turn signal, but does not disclose varying a wattage to vary a frequency or intensity. However, Dantoni discloses a control circuit adapted to vary a wattage to vary an intensity of the turn signal. Wattage is varied by increasing the amount of light(s) to vary intensity (col 3, lns 60-67; col 4, lns 1-4 and 27-29). It would have been obvious to vary a wattage to vary frequency and intensity so that a driver is visually alerted to a degree of a turn, via a flashing light with variable brightness, in order to avoid a collision (col 1, lns 52-56).

For claims 21 and 26, the claims are interpreted and rejected for the same reasons as stated in the rejection of claims 8 and 9 as stated above regarding varying an intensity of a turn signal and varying wattage applied to a blinker (turn signal).

For claim 25, the claim is interpreted and rejected for the same reasons as stated in the rejection of claims 11 and 20 as stated above regarding an angle of the wheel.

For claim 30, the claim is interpreted and rejected for the same reasons as stated in the rejection of claim 8 as stated above regarding wattage.

For claims 29 and 32, Middlebrook discloses all of the limitations of claim 1 except Middlebrook discloses varying a frequency, not intensity. Dantoni, however, discloses varying an intensity of the turn signal (col 3, Ins.60-67; col 4, Ins 1-4 and 27-29). It would have been obvious to vary an intensity of a turn signal so that a driver is visually alerted to a degree of a turn, via a flashing light with variable brightness, in order to avoid a collision (col 1, Ins 52-56).

For claim 33, the claim is interpreted and rejected for the same reasons as stated in the rejection of claims 1 and 32.

For claim 35, the claim is interpreted and rejected for the same reasons as stated in the rejections of claims 8 and 9 as stated above regarding varying an intensity of a turn signal and varying a wattage of a blinker (turn signal).

Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dantoni (US 5,673,019), as applied to claim 18, and further in view of Middlebrooke et al. (US 4,638,295).

Dantoni discloses a circuit breaker and not a microcontroller to generate a pulsing sequence. However, Middlebrooke discloses a control circuit that comprises a microcontroller to generate a pulsing sequence to drive the turn signal lamp when the vehicle is turning (col 5, lns 59-67; col 6, lns1-6; Fig. 2A, items 108, 68, 90-96, 110). It is obvious that microcontrollers are often used in lieu of circuit breakers for compacting circuitry to meet the requirements of smaller designs.

Claims 38 and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dantoni (US 5,673,019), and further in view of Goertler et al. (US 4,348,655).

Dantoni does not disclose a pulse generator dependent on analog voltage levels and therefore, does not disclose varying duty cycle and amplitude. However, Goertler discloses outputting a turn signal with a varying duty cycle and amplitude of an output signal (col 4, lns 52-68; Fig. 1, items 40-48). It would have been obvious to vary a duty cycle and amplitude of the voltage controlled oscillator in order to produce an output from a specific signal.

Claims 3, 10, 15, and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Middlebrook et al. (US 4,638,295), and further in view of Goertler et al. (US 4,348,655).

Middlebrook discloses a flasher relay (Fig. 2A, items 92, 94) as a pulse generator, but does not disclose a pulse generator dependent on analog voltage levels. However, Goertler discloses pulse generators where the duty cycle and amplitude of the output signal is dependent upon analog voltage levels, to output the pulsing sequence to a circuit that drives the turn signal lamps when the vehicle is turning (col 4, lns 52-68;

Fig. 1, items 40-48). It would have been obvious to one of ordinary skill in the art, at the time the invention was made to use a pulse generator dependent on analog voltage levels so that the generator is developed as a voltage controlled oscillator in order to produce an output from a specific signal.

Claims 27, 31, and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Middlebrook et al. (US 4,638,295) and Dantoni (US 5,673,019), and further in view of Goertler et al. (US 4,348,655).

Claims 27 and 31 are interpreted and rejected for the same reasons as stated in the rejection of claim 3 as stated above.

Claim 34 is interpreted and rejected for the same reasons as stated in the rejection of claims 3 and 29.

(10) Response to Argument

For claims 1 (pgs 10-12 of Appeal Brief) and claims 16, 20, and 28 (pgs 17 and 18), Appellant argues that Middlebrook does not describe, teach or suggest, expressly or inherently, "[a] system to... indicate that the vehicle is turning by varying a frequency and/or intensity ... based upon an amount of time during which the vehicle is turning." However, Middlebrook does disclose "[a] system to... indicate that the vehicle is turning as an input by varying a frequency and/or intensity ... based upon an amount of time during which the vehicle is turning."

Middlebrook discloses a system, which indicates that the vehicle is turning by varying a frequency and/or intensity with which the turn signal blinks in proportion to an amount of time during which the vehicle is turning. The amount of time is interpreted as

a window of time during which vehicle movement or motion occurs from a first position of a vehicle to a second position of a vehicle. For example, during a first time, the vehicle is at zero time when the vehicle is stopped and the turn signal is activated while the vehicle is waiting to move into a turn, but not yet turning. The vehicle is at a time greater than zero when the motion detector senses vehicle movement and actual turning of the vehicle occurs. While the turning process occurs, the frequency with which the turn signal lamps flash are varied accordingly based on the input time window (col 1, Ins 8-14; col 2, Ins 29-42).

For claims 4-6 (pgs 12-15), Appellant argues that Middlebrook does not disclose an apparatus comprising a turn signal lamp to produce a turn signal based upon the output signal, wherein the output signal varies a frequency and/or intensity with which the turn signal lamp blinks in proportion to the position of the shaft. However, since Middlebrook discloses that the steering wheel column comprises both a wheel and a shaft for controlling vehicle movement, Middlebrook discloses the output signal varies a frequency and/or intensity with which the turn signal lamp blinks **in proportion to the position of the shaft**. Movement of the positions of the steering column shaft produces an output signal that visually alters a turn signal lamp by frequency (blinking rate). Also, see rejection and citations for claims 2 and 4 above. In addition, Middlebrook discloses a steering wheel position switch (52) that determines the degree of turn of a steering wheel, which provides additional evidence that the angle of the turn is accounted for by measuring the angle in degrees during the turning process.

For claims 25 and 32 (pgs 19-21), Appellant argues that the combination of Middlebrook and Dantoni requires the use of impermissible hindsight. Both Middlebrook and Dantoni disclose movement of the positions of the steering column to produce an output signal that visually alters a turn signal lamp – either by frequency (blinking rate) or intensity (brightness). For the above reasons, the examiner strongly disagrees with Appellant that the combination of the references require impermissible hindsight.

Appellant argues that the combination of Dantoni and Middlebrooke does not disclose varying an intensity of a turn signal based upon the angle (of the wheel of the vehicle). Middlebrooke discloses varying a frequency of a turn signal based on position of the steering column (comprising the wheel and the shaft). Dantoni discloses varying an intensity of a turn signal based on position of the steering column (comprising the wheel and the shaft). In addition, Dantoni discloses the turn signal based upon the angle of the wheel (see above claims 11 and 18).

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/Jennifer Mehmood/
Primary Examiner
August 28, 2009

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